# ABSTRACT OF THE DISCLOSURE

A computer-implemented design tool is provided for analyzing a wire harness design for an electrical systems. The design tool includes: a synchronizing rule set residing in a data store; and a synchronizer adapted to receive topographical data for at least one wire harness in the electrical system and wire layout data for at least one wire routed in the wire harness and operable to merge the wire data with the topographical data to form a comprehensive wire harness data file in accordance with the synchronizing rule set; and a user interface for manipulating data in the wire harness data file.